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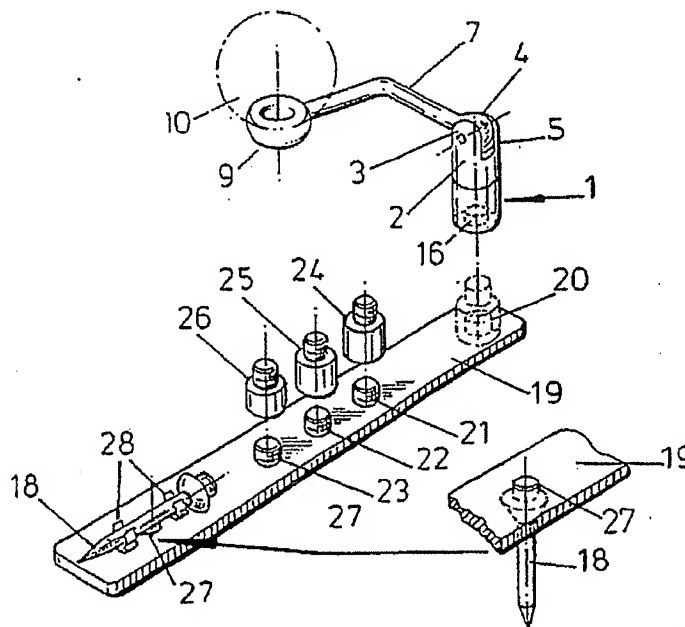
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(54) Title: A GOLF TEE



(57) Abstract

A golf tee comprising a head (1) having an upper swivelling part (2) pivotal about the vertical axis of the head (1) and carrying an arm (7) pivotable about a horizontal axis through the upper part (2) of the head and carrying a ball supporting member (9). The head (1) is removably attached to a ground engaging stabilising base plate (19) which carries a number of spacers (24, 25, 26) which may be interposed between the base plate (19) and the head (1) to determine the height of the ball (10), and a ground anchoring shank (18) which in use may be attached beneath the plate (19) and pressed into the ground to provide additional anchorage. The arm (7) is angled to prevent contact with a club head when the ball is struck and may be resiliently supported on the head (1) to permit downward deflection of the arm when the ball is struck.

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A GOLF TEE

THIS INVENTION relates to a golf tee.

A conventional golf tee has a pointed shank with an enlarged head affording a concave ball-supporting surface. The tee is of inexpensive construction, usually of moulded synthetic plastics material, since it may be lost or damaged in use.

It has been previously proposed to make non-disposable tees which remain undamaged in the ground after use. A common feature of such tees is that the ball-supporting surface is displaced laterally from the shank by means of a cantilevered arm which can pivot around the shank axis when the ball is struck. For example, in US Patent No. 3743298 the vertical shank has a pivotal head connected to a horizontal ball-supporting arm. The inner end of the horizontal arm is pivotally mounted on a horizontal pin extending transversely of the rear end of a groove in the shank head such that the arm is supported by the floor of said groove. When the tee is out of use the horizontal arm can be pivoted into a position alongside the shank for ease of portability. One disadvantage of this design is that the horizontal arm is straight and may therefore be struck by the head of a golf club in use.

It is an object of the present invention to provide a golf tee in which the aforesaid disadvantage is obviated or mitigated.

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According to the present invention there is provided a golf tee having ground locating means, a cantilevered arm mounted on the ground locating means for pivotal movement about vertical and horizontal axes relative thereto, and ball-supporting means at the outer end of said arm, characterised in that the arm is bent away from the side at which the ball is addressed so as to avoid contact of the arm with a club head when the ball is struck. Preferably, the arm is supported generally horizontal on a resilient element permitting downward deflection of the arm.

The invention will now be further described by way of example only with reference to the accompanying drawings, in which:-

Fig. 1 is a perspective view of one embodiment of golf tee in accordance with the invention,

Fig. 2 shows part of the swivelling head of the golf tee of Fig. 1 in vertical section and secured to a ground anchoring shank;

and Fig. 3 is a partial plan view.

Referring now to the drawings, the golf tee has a head 1 with a swivelling cup shaped upper part 2 extending upwardly into a pair of side walls 3, 4 spaced apart by a groove 5. A rounded inner end 6 of a cantilever arm 7 is pivotally mounted on a pin 8 of which the ends are supported in the side walls 3, 4. The free end of the arm 7 terminates in an annular ball-supporting element 9 for locating a golf ball 10. The element 9 is preferably made of a resilient

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material such as rubber and is a push fit on the end of arm 7 thus to be replaceable if lost or damaged.

The cup-shaped portion 2 has a stepped bore 11 in the enlarged upper part in which is received the head 12 of a screw fastener 13 the threaded shank of which engages a tapped hole in the lower part 14 of the head 1. The head 12 of the screw fastener 13 is countersunk into the portion 2 which is closed by a rubber cap 15 with a concave upper surface in which rests the rounded inner end 6 of the arm 7. The arm 7 is cranked at about its mid point, or curved, away from the side at which the ball is addressed.

The head 1 is provided, in the lower end face of a lower part 14, with a tapped hole 16 by which the head 1 can be connected to a threaded post 17 at the upper end of a pointed ground anchoring shank 18 to provide the assembled tee shown in Fig. 2. Alternatively, the head 1 may be connected to alternative ground anchoring means as will now be described.

As illustrated in Fig. 1 such alternative ground anchoring means comprise an elongate rectangular plate 19 which is made of heavy metal, e.g. steel plate, so as to provide a stable ground locating means when laid flat on a ground surface, for example a rubber mat. On its upper surface the plate 19 is provided adjacent one end with a threaded boss 20 for screw connection to the tapped hole 16 in the head 1. Similar threaded bosses 21, 22 and 23 in the central region of the plate 19 respectively receive alternative spacers

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24, 25 and 26 each of which has a body with a threaded bore for engaging the respective threaded boss. As indicated, the bodies of the spacers 24, 25 and 26 are of differing lengths with the spacer 24 having the longest body, the spacer 26 having the shortest body and the spacer 25 having a body of intermediate length. Projecting from the upper end of each spacer is a threaded boss similar to the bosses 20, 21, 22 and 23. As indicated in chain-dot line in Fig. 1, a spacer 24, 25 or 26 may be removed from its storage position on the boss 21, 22 or 23 and fitted to the boss 20 so that the threaded boss of spacer 24, 25 or 26 can be received in the tapped hole 16 in the swivelling head 1 thereby elevating the head 1 above the plate 19 by a distance corresponding to the length of the spacer body.

At the other end of the plate 19 is a threaded hole 27 into which the shank 18 can be fitted in the manner illustrated in the inset to Fig. 1. The shank 18 can then be pressed into the ground in order to provide additional anchorage for the plate 19 and the swivelling head 1. When not in use the shank 18 may be retained in spring clips 28 fixed to the plate 19.

In use, with the head 1 mounted on plate 19 or directly on shank 18 pressed into the ground, the upper part 2 of the head 1 is pivotal about a vertically disposed axis. Such pivotal movement is caused by the impact force when a club head 29 moving in the direction of the arrow 30 as shown in Fig. 3 strikes the ball 10. In the case of a club head which makes an angled contact with the ball 10, as shown at 29a, a leading part of the club head may cross a straight line 31 interconnecting the inner and outer ends of the arm

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7. If the arm 7 were not cranked or curved away the club head at 29a would make contact with the arm 7 before the ball 10. The arrow 32 in Fig. 3 indicates the direction in which the arm 7 swivels after the ball has been struck. Such swivelling motion absorbs the energy which is normally transferred to the tee and prevents the horizontal component of the impact force from removing or damaging the tee. There may also be upward or downward forces transmitted to the tee when the ball is struck. In the case of upward forces these are accommodated by upward swivelling movement of the arm 7 about the pin 8. In the case of a downward component of force the arm 7 is deflected downwardly against the rubber pad 15 which acts as a shock absorber and restores the arm 7 to its starting position.

If required, a resilient member such as a spring may be located beneath and thus resiliently support the swivelling head 1.

CLAIMS

1. A golf tee having ground locating means, a cantilevered arm mounted on the ground locating means for pivotal movement about vertical and horizontal axes relative thereto, and ball supporting means at the outer end of said arm; characterised in that the arm is bent away from the side at which the ball is addressed so as to avoid contact of the arm with a club head when the ball is struck.

2. A golf tee according to Claim 1, further characterised in that the arm is supported generally horizontal on a resilient element permitting downward deflection of the arm when the ball is struck.

3. A golf tee according to Claim 1 or Claim 2, wherein the ground locating means is a pointed shank adapted to be pressed into the ground, said arm being pivotable about said vertical and horizontal axes relative to said pointed shank.

4. A golf tee according to Claim 1 or Claim 2, wherein said cantilevered arm is attached to the ground locating means by a head having a first part fixedly attached to the ground locating means and a second part pivotally mounted about said vertical axis on said first part.

5. A golf tee according to Claim 4, wherein said second part includes a pair of upwardly extending side walls spaced apart by a groove, said arm being attached within said groove and pivotable

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relative thereto about a horizontal pin passing through the arm and through the pair of side walls.

6. A golf tee according to Claim 1, wherein the ball supporting means comprises an annular element made of a resilient material and being a push fit on the outer end of said arm.

7. A golf tee according to Claim 4, wherein the pivoting part of said head has an internal stepped bore in which is received the head of a screw fastener a threaded shank of which engages a tapped hole in the fixed part of the head, said resilient element comprising a rubber cap which closes the otherwise opened top of the stepped bore with a concave upper surface in which rests the inner end of said arm.

8. A golf tee according to Claim 2, wherein said cantilevered arm is cranked at about its mid-point away from a straight line extending between the vertical pivotal axis of the arm and its outer end, away from the side of said line at which the ball is addressed.

9. A golf tee according to Claim 1 or Claim 2, wherein the ground locating means comprises a flat stabilising base in the form of an elongate plate with said cantilevered arm mounted thereon for pivotal movement about said vertical and horizontal axes relative to the plate.

10. A golf tee according to Claim 9, wherein said elongate

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plate carries at least one spacer adapted to be interposed between the cantilevered arm and the elongate plate thus to determine the height of the ball supporting means.

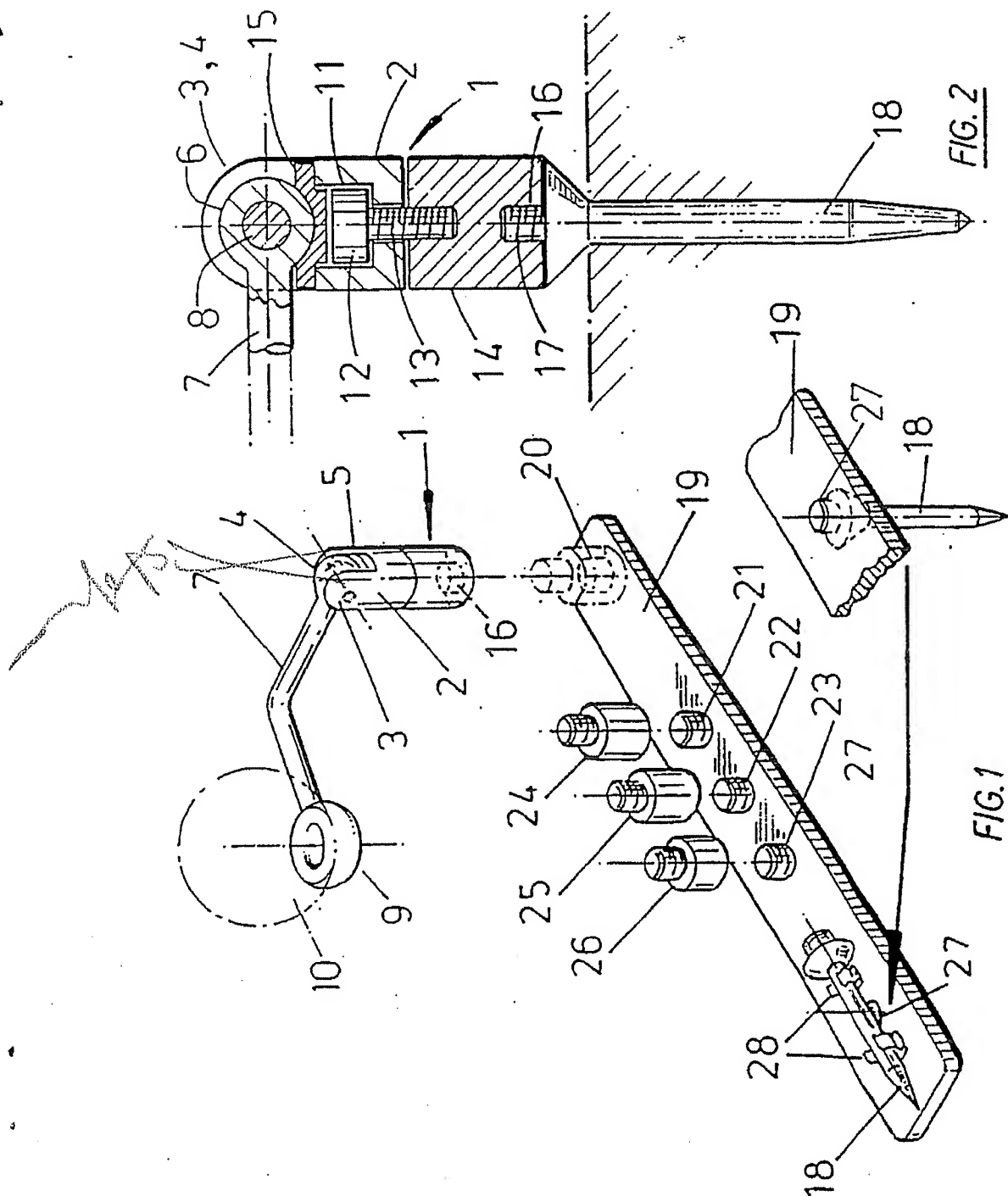
11. A golf tee according to Claim 10, including a plurality of spacers of different heights to enable the height of the ball supporting means to be adjusted.

12. A golf tee according to Claim 9 or Claim 10, including a ground engaging shank removably attached to the elongate plate and adapted to be pressed into the ground to provide additional anchorage for the ground locating means.

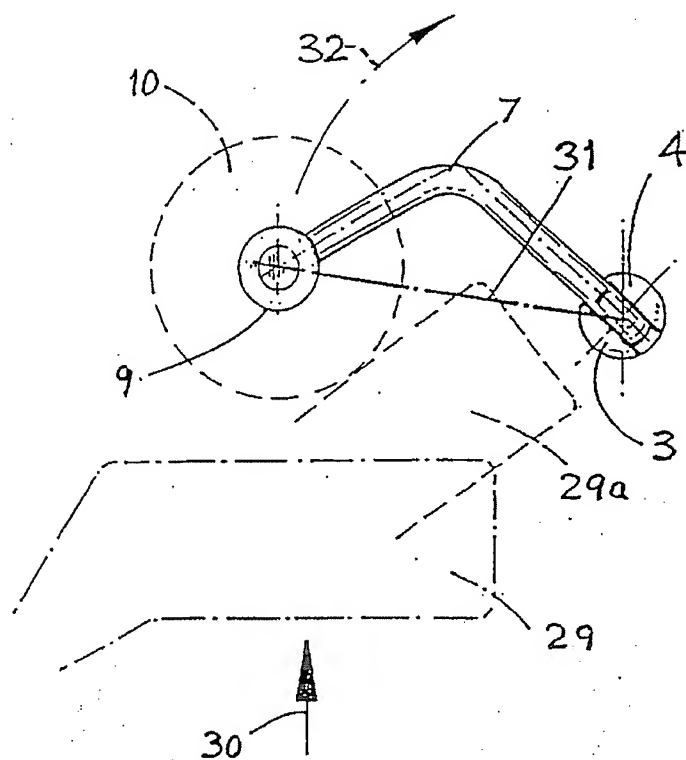
13. A golf tee according to Claim 12, including means on said elongate plate to retain the ground anchoring shank when not in use.

14. A golf tee substantially as hereinbefore described, with reference to and as illustrated in the accompanying drawings.

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FIG.3

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 92/02410

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁶ According to International Patent Classification (IPC) or to both National Classification and IPC Int.Cl. 5 A63B57/00											
II. FIELDS SEARCHED <div style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black; margin: 5px 0;">Minimum Documentation Searched⁷</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%; border: 1px solid black; padding: 5px;">Classification System</th> <th style="width: 70%; border: 1px solid black; padding: 5px;">Classification Symbols</th> </tr> <tr> <td style="border: 1px solid black; padding: 5px;">Int.Cl. 5</td> <td style="border: 1px solid black; padding: 5px;">A63B</td> </tr> </table> <div style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black; margin: 5px 0;">Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched⁸</div>			Classification System	Classification Symbols	Int.Cl. 5	A63B					
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Int.Cl. 5	A63B										
III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%; padding: 5px;">Category¹⁰</th> <th style="width: 70%; padding: 5px;">Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²</th> <th style="width: 20%; padding: 5px;">Relevant to Claim No.¹³</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">Y</td> <td style="padding: 5px;"> US,A,1 800 647 (B KRAFFT) 1 August 1929 see page 1, line 88 - page 2, line 4 see figures </td> <td style="text-align: center; vertical-align: top; padding: 5px;">1</td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">Y</td> <td style="padding: 5px;"> US,A,2 155 803 (M RIDER) 19 December 1935 see the whole document </td> <td style="text-align: center; vertical-align: top; padding: 5px;">1</td> </tr> </tbody> </table>			Category ¹⁰	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³	Y	US,A,1 800 647 (B KRAFFT) 1 August 1929 see page 1, line 88 - page 2, line 4 see figures	1	Y	US,A,2 155 803 (M RIDER) 19 December 1935 see the whole document	1
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Y	US,A,1 800 647 (B KRAFFT) 1 August 1929 see page 1, line 88 - page 2, line 4 see figures	1									
Y	US,A,2 155 803 (M RIDER) 19 December 1935 see the whole document	1									
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>¹⁰ Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&" document member of the same patent family</p> </div> </div>											
IV. CERTIFICATION <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"> Date of the Actual Completion of the International Search <div style="text-align: center; font-weight: bold;">18 AUGUST 1993</div> </td> <td style="width: 50%; padding: 5px;"> Date of Mailing of this International Search Report <div style="text-align: center; font-weight: bold;">24. 08. 93</div> </td> </tr> <tr> <td style="width: 50%; padding: 5px;"> International Searching Authority <div style="text-align: center; font-weight: bold;">EUROPEAN PATENT OFFICE</div> </td> <td style="width: 50%; padding: 5px;"> Signature of Authorized Officer <div style="text-align: center; font-weight: bold;">VEREECKE A.</div> </td> </tr> </table>			Date of the Actual Completion of the International Search <div style="text-align: center; font-weight: bold;">18 AUGUST 1993</div>	Date of Mailing of this International Search Report <div style="text-align: center; font-weight: bold;">24. 08. 93</div>	International Searching Authority <div style="text-align: center; font-weight: bold;">EUROPEAN PATENT OFFICE</div>	Signature of Authorized Officer <div style="text-align: center; font-weight: bold;">VEREECKE A.</div>					
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**ANNEX TO THE INTERNATIONAL SEARCH REPORT
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GB 9202410
SA 70343

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.
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18/08/93

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A-1800647		None	
US-A-2155803		None	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82